UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

September 28, 2000

4WD-SSMB

MEMORANDUM

SUBJECT: Five-Year Review Report
Diamond Shamrock Landfill Site
Cedartown, Polk County, Georgia
GAD990741092

FROM: Mario E. Villamarzo, Chief
AL/GA/MS Section

THRU: Curt Fehn, Chief
South Site Management Branch

TO: Richard D. Green, Director
Waste Management Division

Attached please find a copy of the Five-Year Review Final Report for the Diamond Shamrock Landfill Site located in Cedartown, Polk County, Georgia. Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended requires that if a remedial action is taken that results in any hazardous substances, pollutants, or contaminants remaining at a site, the Environmental Protection Agency (EPA) shall review such remedial action no less often than each five years after initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented.

The Record of Decision (ROD) for this Site was signed on May 3, 1994. The PRP performed the remedial action which consisted of the implementation of deed restriction(s) to prevent groundwater usage and drilling resulting in exposure to groundwater contaminants; completion and maintenance of site access restrictions (fencing and signage); and conducting ground and surface water monitoring to confirm that the natural attenuation processes are effectively reducing the concentrations of the contaminants of concern.

The Report has gone through EPA Region 4 review. Based upon this review, it has been determined that the remedial action taken at this Site continues to be protective of human health and the environment. No deficiencies were noted during the five-year review. At this time we are seeking the Division Director's approval of this document.

Approved by: _____ Date: _____

EPA Five-Year Review Signature Cover

Key Review Information

Site Identification			
Site name: Diamond Shamrock Landfill Site			EPA ID: GAD990741092
Region: IV	State: GA	City/County: Polk County, Cedartown	
Site Status			
NPL status: Active			
Remediation status (under construction, operating, complete): Complete			
Multiple OU's* (highlight): N Number of OU's: 1			
Construction completion date: 5/3/94			
Fund/PRP/Federal facility lead: PRP		Lead agency: EPA Region	
Has site been put into reuse? (highlight): N			
Review Status			
Who conducted the review (EPA Region, State, Federal agency): US Army Corps of Engineers			
Author name: C. W. Belin		Author title: Hydrologist, USACE, Savannah District	
Author affiliation: Engineering Division, US Army Corps of Engineers			
Review period: 4/10/2000 – 5/31/2000			Date(s) of site inspection: 5/1-2/2000
Highlight: Statutory or **Policy**		Policy Type (name): 1. Pre-SARA 2. Ongoing 3. Removal only 4. Regional Discretion	Review Number (1,2, etc.) 1
Triggering action event: First Five-Year Review Completion Date			
Trigger action date: 5/4/1994		Due date: 6/1/2000	

*** "OU" refers to operable unit.**

Deficiencies:

No deficiencies found in the preparation of this report.

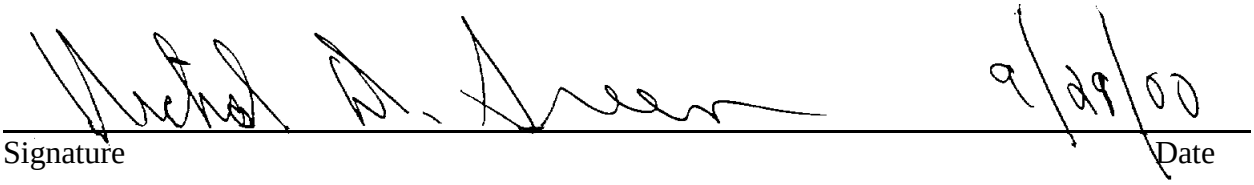
Recommendations and Required Actions:

Continue with remedy as stipulated in the Record of Decision

Protectiveness Statements:

Because the remedial actions at all are protective, the remedy for this site is protective of human health and the environment.

Signature of EPA Region 4, Waste Management Division Director and Date



Signature Date

Five-Year Review Report

Diamond Shamrock Landfill Site
(EPA ID #: GAD990741092)
Adjacent to West Girard Avenue
Cedartown, Georgia

Property currently owned by:
Henkel Corporation
300 Brookside Avenue
Ambler. Pennsylvania 19002

Prepared for:
Environmental Protection Agency
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-3104

Prepared by:
US Army Corps of Engineers
Savannah District
P. O. Box 889
Savannah, GA 31402-0889

EPA Five-Year Review Signature Cover

Key Review Information

Site Identification			
Site name: Diamond Shamrock Landfill Site			EPA ID: GAD990741092
Region: IV	State: GA	City/County: Polk County, Cedartown	
Site Status			
NPL status: Active			
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Who conducted the review (EPA Region, State, Federal agency): US Army Corps of Engineers			
Author name: C. W. Belin		Author title: Hydrologist, USACE, Savannah District	
Author affiliation: Engineering Division, US Army Corps of Engineers			
Review period: 4/10/2000 – 5/31/2000			Date(s) of site inspection: 5/1-2/2000
Highlight: Statutory or **Policy**		Policy Type (name): 1. Pre-SARA 2. Ongoing 3. Removal only 4. Regional Discretion	Review Number (1,2, etc.) 1
Triggering action event: First Five-Year Review Completion Date			
Trigger action date: 5/4/1994		Due date: 6/1/2000	

* **"OU"refers to operable unit.**

Deficiencies:

None found in the preparation of this report.

Recommendations and Required Actions:

Continue with remedy as stipulated in the Record of Decision

Protectiveness Statements:

Because the remedial actions at all are protective, the remedy for this site is protective of human health and the environment.

Other Comments:

None

Signature of EPA Regional Administrator or Division Director and Date

Signature Date

Name and Title

Diamond Shamrock Landfill Site
First Five-Year Review Report

I. Introduction

The United States Environmental Protection Agency (EPA) Region IV has conducted a five-year review of the remedial actions implemented at the Diamond Shamrock Landfill Site in Polk County, Georgia. This review was conducted from April 2000 through May 2000. This report documents the results of that review. The purpose of five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify deficiencies found during the review, if any, and identify recommendations to address them.

EPA conducted this review pursuant the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), NCP section 300.430(f)(4)(ii), because achievement of clean up levels will take more than 5 years at this site, a Five-year Review is conducted as a matter of policy. EPA conducts policy reviews when; 1) sites with pre-SARA RODS which, upon completion of the remedy, will not allow for unlimited use and unrestricted exposure; 2) long-term remedial action-sites where no hazardous substances will remain above levels that will allow unlimited use and unrestricted exposure upon completion of the remedy, but cleanup will require five or more years to attain; and 3) other sites which, upon completion of the remedy, will not allow for unlimited use and unrestricted exposure including, but not limited to, deleted sites with only pre-SARA RODs; sites with No Action or No Further Action RODS; National Priority List sites at which a State has selected a remedy under its own authority; and such other sites as the Region decides may warrant five-year reviews.

This is the first five-year review for the Diamond Shamrock Landfill Site. The trigger for this statutory review is the first 5-year review date shown for this project, EPA Identification Number GAD990741092. Hazardous substances, pollutants, or contaminants will not remain onsite, but more than five years are needed to complete remedial actions. All remedies have been constructed, and the ground water pump and treat system continues to operate as intended.

III. Site Chronology

Table 1 lists the chronology of events for the Diamond Shamrock Landfill Site.

Table 1: Chronology of Site Events

Date	Event
11/01/1999	Discovery
09/04/1991	Removal
09/01/1982	Preliminary Assessment
09/01/1982	Site Assessment
09/28/1985	Site Inspection
01/09/1986	HRS Package
01/22/1987	Proposal to NPL
08/30/1990	Final Listing on NPL
01/09/1987	NPL RP Search
09/16/1991	RI/FS Negotiations
11/02/1990	Administrative Order on Consent
05/31/1994	PRP RI/FS
12/05/1990	Administrative Records
05/03/1994	Record of Decision
10/14/1994	RD/RA Negotiations
03/30/1995	Consent Decree
06/29/1995	PRP RD
01/26/1995	Lodged by DOJ

IV. Background:

The Diamond Shamrock site is located near the northwest margin of the town of Cedartown, Georgia. The site is bound to the north by the Cedartown Wastewater Treatment Plant and to the east by Henkel's Wastewater Treatment Plant. Land to the south and east is largely residential with some commercial business and light industry. The property is primarily a flat meadow.

Prior to 1968, the land use of the site was agricultural. In 1972, approximately 1,500 gallons of oil pitch and 600 to 800 drums containing reportedly obsolete, off-specification products and raw materials from chemical plant manufacturing operations were buried in unlined disposal trenches.

On June 27, 1980 the Diamond Shamrock Corporation, the owners, reported to the Georgia Environmental Protection Division the results of an internal investigation concerning the

waste material buried on site. Henkel Corporation acquired the property in 1987. In March 1988, EPA performed soil, geophysical, and environmental studies at the site. In July 1989, Henkel conducted test excavation/waste characterization which identified five waste disposal areas. Under the direction of EPA, waste removal was completed in fall of 1990. The trench waste materials were removed and then backfilled with soil. Henkel performed additional site studies during the RI/FS fieldwork in the summer of 1992.

This ROD address the first and final cleanup action planned for the site. The groundwater present beneath the site contains elevated levels of contaminants. The purpose of this action is to prevent future exposure to contaminated groundwater. The remedy status for the media addressed in this ROD are as follows: Groundwater 1 is Final Action. The media volume associated with this site is not documented. The state did not originally concur with the selected remedy.

V. Remedial Actions:

A. Remedy Selection;

The selected remedial action for this site includes deed restrictions to prevent groundwater usage and drilling; access restrictions such as fencing and signs; ground and surface water monitoring to confirm natural attenuation processes are effective and that contaminants are not migrating. The overall Present Worth costs are $461,331. The annual O&M costs are $34,730 (Year 1 to 30.).

Major components of the selected remedy, as stipulated in the Record of Decision, include:

- Implementation of deed restriction(s) or restrictive covenant(s) to prevent groundwater usage and drilling resulting in exposure to groundwater contaminants,
- Completion and maintenance of site access restrictions (fencing and signage),
- Ground and surface water monitoring program to confirm that natural attenuation processes are effective and to monitor potential migration,
- Performance of five year reviews in accordance with Section 121c of CERCLA to assure that human health and the environment continue to be protected by the remedy, that natural attenuation continues to be effective, and whether groundwater performance standards continue to be appropriate, and
- Continued groundwater monitoring upon attainment of the performance standards at sampling intervals to be approved by EPA.

The only record of decision (ROD) for the Diamond Shamrock Landfill Site was signed on May 3, 1994. The remedial action objectives are to: assure that human health and the

environment continue to be protected by the remedy, that natural attenuation continues to be effective, and that groundwater performance standards continue to be appropriate.

In summary, the current remedial system is functioning toward meeting the cleanup levels for the contaminant of concern, arsenic.

B. Remedy Implementation;

- Deed restrictions and site access restrictions have been placed in effect as stipulated by the Record of Decision.
- Monitoring data reveal that natural attenuation is reducing the concentrations of the four contaminants stipulated in the record of decision.
- This document is the first of the five-year reviews to be prepared. Thus, this condition of the Record of Decision is being fulfilled.
- Ground water monitoring has been performed since the agreement of the Record of Decision. The summary of these data may be viewed in Appendix C of this document.

C. System Operations;

Work at the site has been funded by the Potentially Responsible Party (PRP), Henkel Corporation of Ambler, Pennsylvania, with oversight by not only the US EPA but also the GAEPD.

D. Progress Since the Last Five-Year Review;

Since this is the first 5-Year Review Report, no other report is available and thus no progress is reportable.

VI. Five-Year Review Findings:

A. Five-Year Review Process:

The purpose of a five-year review is to determine whether the remedy at a site is protective of human health and the environment. Where remedial actions are still under construction, a five-year review should confirm that immediate threats have been addressed and that EPA expects the remedy to be protective when all remedial actions are complete. A five-year review does not reconsider decisions made during the selection of the remedy, but evaluates the implementation and performance of the selected remedy.

In some cases, a five-year review can recommend that the remedy be re-evaluated, or that additional response actions be considered. One example is when a remedy will not meet cleanup levels for a contaminant of concern. Another is when a contaminant, source, or pathway of exposure is newly identified. Finally, a five-year review may recommend that the remedy be re-evaluated when a contaminant, source, or pathway has not already been sufficiently addressed.

Five-year reviews include recommendations to ensure that a remedy will be or will continue to be protective, and to address any deficiencies identified through the review. The results of the review, including the protectiveness of the remedial actions and the recommendations, are presented in a five-year review report. Finally, EPA reports the results of the review to Congress.

A five-year review may be required when a remedy is selected under § 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or if portions of § 121 are used in conducting a remedy, such as the use of the permit exclusion. A five-year review may also be required for a removal-only site on the National Priorities List (NPL). Key considerations for whether a review is required include the following:

- whether hazardous substances, pollutants, or contaminants remain above levels that allow for unlimited use and unrestricted exposure;
- the length of time that they will remain above these levels; and
- for remedies selected under CERCLA § 121, whether they were selected before or after the effective date of the Superfund Amendments and Reauthorization Act of 1986 (SARA).

B. Interviews:

On April 10 -12, 2000, Dr. Charles W. Belin, Jr., Hydrologist with the US Army Corps of Engineers, Savannah District, (COE) visited the Region IV offices of the US Environmental Protection Agency (EPA) to view the Administrative Record and associated documents pertaining to the Diamond Shamrock site. Mr. Frank R. Booth, Environmental Science Specialist, Golder Associates, Inc., was interviewed at the site. He has been the technical manager for the remediation and monitoring activity at the site. Mr. Booth kindly provided summary spreadsheets and figures for the property for inclusion in this document.

Ms. Felicia Stanton, Chemist for the GEO Specialty Chemical Corporation wastewater treatment facility, was interviewed concerning any odors, or other evidence of contaminants proceeding from the Diamond Shamrock site. She stated that neither she nor GEO Specialty Chemicals had any problems with the site.

No other individuals familiar with the site and its status could be located for interviews.

C. Site Inspection:

A site inspection was made by Dr. Belin on May 1 - 2, 2000 at the site in Cedartown, Polk County, Georgia. He met Mr. Frank R. Booth, Environmental Science Specialist, Golder Associates, Inc., at the site and they fully toured the site and evaluated the area. As can be seen from viewing the digital images in Appendix D of this document, ecologically the site is a pasture with a few trees located within it. In addition, the site is bounded on the north, west and south by a buffer of trees approximately 50 - 80 feet in width. Because of the relative benign nature of the site surface, hardhats, steel-toed boots, and safety shoes were not deemed necessary by either Dr. Belin or Mr. Booth. In addition, the Site Safety and Health Plan for the site revealed that the site surface was free of contaminant concentrations that exceed any regulatory levels.

Tree species found on site include, red maple, sycamore, sweet gum, and several pines. Shrubs include sweet pepper bush, poison ivy (also in the vine and the forb form), and two species of holly. The wooded buffer areas also have patchy stands of dumb cane, and high bush blueberry.

Throughout the pasture are found several grass species, blackberry, and numerous herbaceous species.

Evidence of white tail deer (scats), raccoon (tracks) and rabbit (scats) were observed at the site. Numerous species of bird were either seen or hears on site, including chipping sparrow, song sparrow, turkey vulture, American crow, blue jays, and chickadee.

Three small bare areas were located on the site. While devoid of most vegetation, these areas seem to be revegetating not only by perimeter pioneers invading these areas but also the revegetation of some rooted material. Mr. Booth explained that he suspected that the bare areas were those that had standing water on them last year and that had lost much of the vegetation due to anoxia. This situation would be expected to be resolved naturally. Dr. Belin gathered a soil sample and smelled it, however, he could not discern a noticeable odor of any contaminants.

The site is inspected periodically by the contractor for the remedial work, Golder Associates, Inc., and the pasture area is mowed approximately 3 - 4 times per year. The vegetation appear to indicate a site that is functioning normally with little or no impact from soil or groundwater contaminants.

D. Risk Information Review:

The following applicable or relevant and appropriate requirements (ARARs) were reviewed for changes that could affect protectiveness of the selected remedy:

- Safe Drinking Water Act (40 CFR Parts 141 - 146);
- Resource Conservation and Recovery Act (40 CFR Part 264);
- Clean Water Act (40 CFR Parts 130 -138);
- Clean Water Act (40 CFR Parts 231 - 232);
- Georgia Safe Drinking Water Act

No changes were discovered between the original ARARs cited in the Record of Decision and the current statutes and regulations applicable to the remedial action. This applied to both the chemical-specific ARARs and to the location-specific ARARs.

E. Data Review

Comparison of Initial and Current Groundwater Concentrations

Please see Table 1 at Attachment C

A review of the Health and Safety Plan (HASP) and Contingency Plan indicates that both are in place and sufficient to control risks at the site.

The data found in Table 1 at Appendix C reveal that the concentrations of those contaminants found at the site have dramatically declined over the past few years. These concentrations have declined.

1.2-dichloroethane: In all wells over the past several years, concentrations of 1,2-dichloroethane have declined to below the required action levels of detection. Thus, in all cases, this contaminant has no longer been analyzed for in many wells.

Toluene: Concentrations of toluene have also declined to below the action levels over the past few years. And therefore, as in the case of 1,2-dichloroethane, this contaminant is no longer analyzed for.

Trichloroethene: In the case of trichloroethene, in most cases, this species also has declined. However, in MW-1 and MW-7, estimated concentrations are 2 µg/L. Natural attenuation is anticipated to reduce this concentration further over the next few years.

Manganese: In 1997, the performance standard for manganese was changed by the EPA from 200 µg/L to 800 µg/L, thus, the regulatory limit for the Diamond Shamrock site was also changed. In some cases, this concentration has been exceeded over the past few years. In particular, at Monitor Wells MW-3, MW-4 and MW-8 had elevated concentrations of manganese. These concentrations are expected to decline over time as evidenced by past monitoring. The agreed-to manganese performance standard is expected to be achieved via natural attenuation.

VII. Assessment

The following conclusions support the determination that the remedy at the Diamond Shamrock Landfill Site remains protective of human health and the environment:

Question A: Have Conditions External to the Remedy Changed Since the Remedy Was Selected?

- ***No Changes in Land Use:*** There are no current or planned changes in land use.

- ***No Changes in Known Contaminants, Sources, or Pathways at the Site:*** No new contaminants, sources, or exposure pathways were identified as part of this five-year review.

- ***No Changes in Known: Hydrologic/Hydrogeologic Conditions:*** The rate of decrease of contaminant levels in groundwater is consistent with expectations at the time of the ROD.

Question B: Has the Remedy Been Implemented in Accordance With Decision Documents?

- ***HASP/Contingency Plan:*** Both the HASP and the Contingency Plan are in place, sufficient to control risks, and have been properly implemented.

- ***Access and Institutional Controls:*** Deed restrictions and restrictive covenants in addition to site access restrictions (fencing and signage) are currently in place to ensure only those authorized to visit the site are able to gain access to the site.

- ***Remedy Performance:*** The remedies stipulated to and agreed to in the Record of Decision are performing as planned.

- ***Adequacy of System Operations:*** System operations procedures are consistent with requirements.

- ***No Need for Optimization:*** In view of the results of the sampling regime, this five-year review does not identify a need for any optimization.

- ***No Early Indicators of Potential Remedy Failure:*** No indictors of potential remedy failures were noted during the review process and the site visit.

Question C: Has Any Risk Information Changed Since the Remedy Was Selected?

- Changes in ARARs: None has been found

VIII. Deficiencies:

No deficiencies were discovered during the site-review. The remedy is working both as designed and as expected.

IX. Recommendations:

Table 9: Recommendations;

Recommendations/ Required Actions	Party Responsible	Oversight Agency	Milestone Date	Required Actions: Currently Affects Protectiveness (Y/N)
Continue with remedy as stipulated in the Record of Decision	PRP	EPA	Semi-annually	Yes

X. Protectiveness Statements:

Because the remedial actions at all are protective, the remedy for this site is protective of human health and the environment.

XI. Next Review:

Providing no changes are forthcoming with respect to sampling and analyses, the next five-year Review would be scheduled no later than June 3, 2005.

XII. Other Comments

In view of the decline in contaminant concentrations throughout the property over an extended period of time, institutional controls appear sufficient to maintain the property and to allow further biodegradation of residual, remaining contaminants.

Attachments

Attachment A: Documents Reviewed
Attachment B: Figures
Attachment C: Tables
Attachment D: Images Documenting Site Conditions

Attachment A

Documents Reviewed

Bibliography

Third Semi-Annual Report (September 1996 Sampling) Remedial Action Performance Monitoring, Diamond Shamrock Landfill Site, Cedartown, Georgia, Letter Report from Golder Associates, Inc., to Ms. Susan K. McGinnis of the Henkel Corporation, dated 10/25/1996.

Fourth Semi-Annual Report (March 1997 Sampling) Remedial Action Performance Monitoring, Diamond Shamrock Landfill Site, Cedartown, Georgia, Letter Report from Golder Associates, Inc., to Ms. Susan K. McGinnis of the Henkel Corporation, dated 5/12/1997.

Fifth Semi-Annual Report (September 1997 Sampling) Remedial Action Performance Monitoring, Diamond Shamrock Landfill Site, Cedartown, Georgia, Letter Report from Golder Associates, Inc., to Ms. Susan K. McGinnis of the Henkel Corporation, dated 10/31/1997.

Sixth Semi-Annual Report (March 1998 Sampling) Remedial Action Performance Monitoring, Diamond Shamrock Landfill Site, Cedartown, Georgia, Letter Report from Golder Associates, Inc., to Ms. Susan K. McGinnis of the Henkel Corporation, dated 5/13/1998.

Seventh Semi-Annual Report (September 1998 Sampling) Remedial Action Performance Monitoring, Diamond Shamrock Landfill Site, Cedartown, Georgia, Letter Report from Golder Associates, Inc., to Ms. Susan K. McGinnis of the Henkel Corporation, dated 11/11/1998.

Eighth Annual Report (March 1999Sampling) Remedial Action Performance Monitoring, Diamond Shamrock Landfill Site, Cedartown, Georgia, Letter Report from Golder Associates, Inc., to Ms. Susan K. McGinnis of the Henkel Corporation, dated 5/5/1998.

Ninth Semi-Annual Report (September 1999 Sampling) Remedial Action Performance Monitoring, Diamond Shamrock Landfill Site, Cedartown, Georgia, Letter Report from Golder Associates, Inc., to Ms. Susan K. McGinnis of the Henkel Corporation, dated 11/16/1999.

Resource Applications, Inc., 9/25/1990, Diamond Shamrock Landfill Oversight Emergency Removal, Work Plan.

US Environmental Protection Agency, Region IV, Administrative Order on Consent, In the Matter of Diamond Shamrock Landfill, Cedartown, Georgia and Henkel Corporation, 300 Brookside Avenue, Ambler, PA 19002. Undated.

US Environmental Protection Agency, Region IV, Record of Decision; Summary of Remedial Alternative Selection; Diamond Shamrock Landfill Site, Cedartown, Polk County, Georgia, dated May 3, 1994.

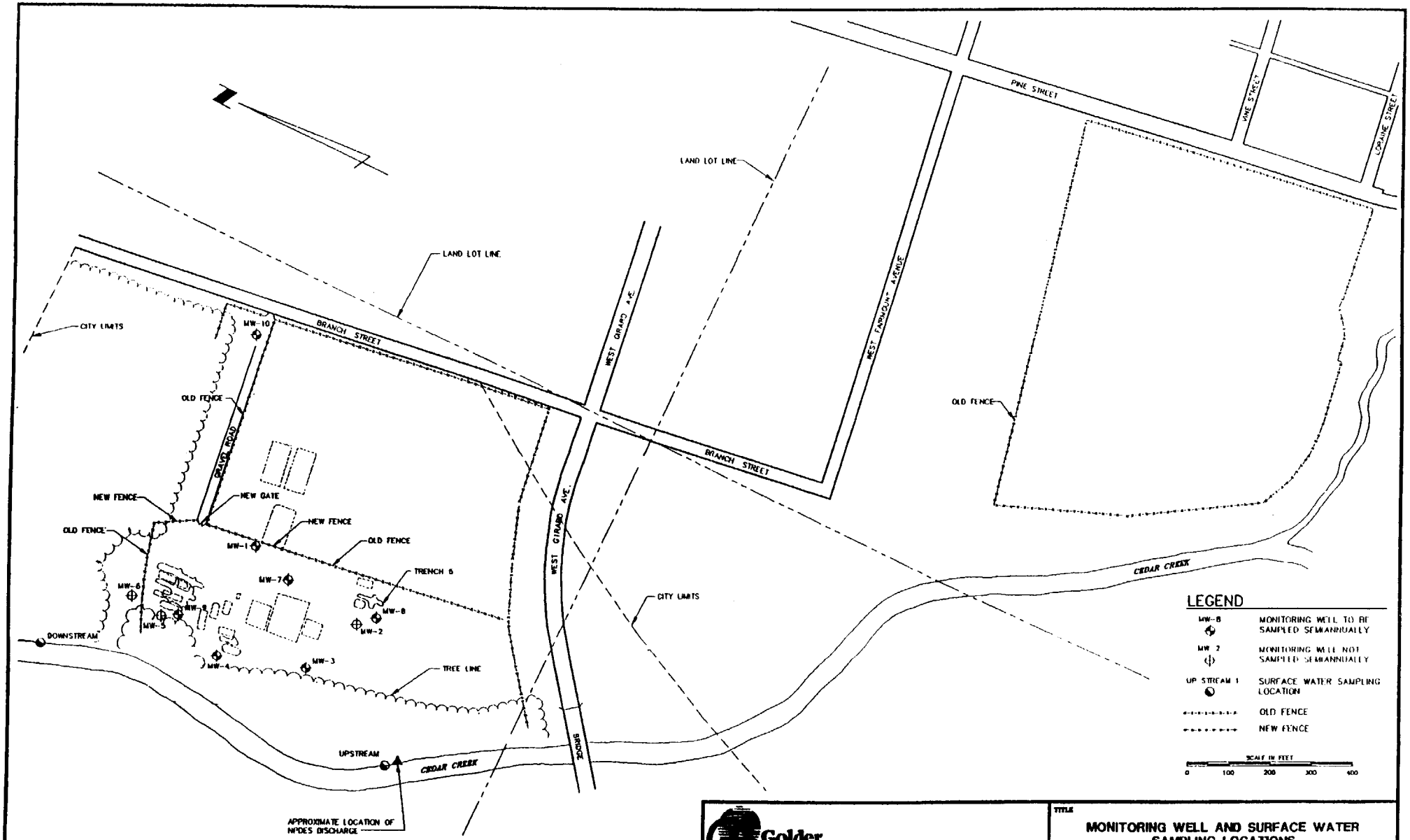
US Environmental Protection Agency, Region IV, 9/9/1997, Memorandum from Curt Fehn to Richard D. Green, Explanation of Significant Difference, Diamond Shamrock Landfill Superfund Site, Cedartown, Polk County, Georgia.

Weston Services, Inc., 6/28/1990, Draft Closure Plan for the "Diamond Shamrock Corporation Landfill Site" in Cedartown, Georgia.

Numerous other letters, memoranda, and reports provided by EPA, Region IV personnel, especially Mr. Charles King,

Attachment B

Figures

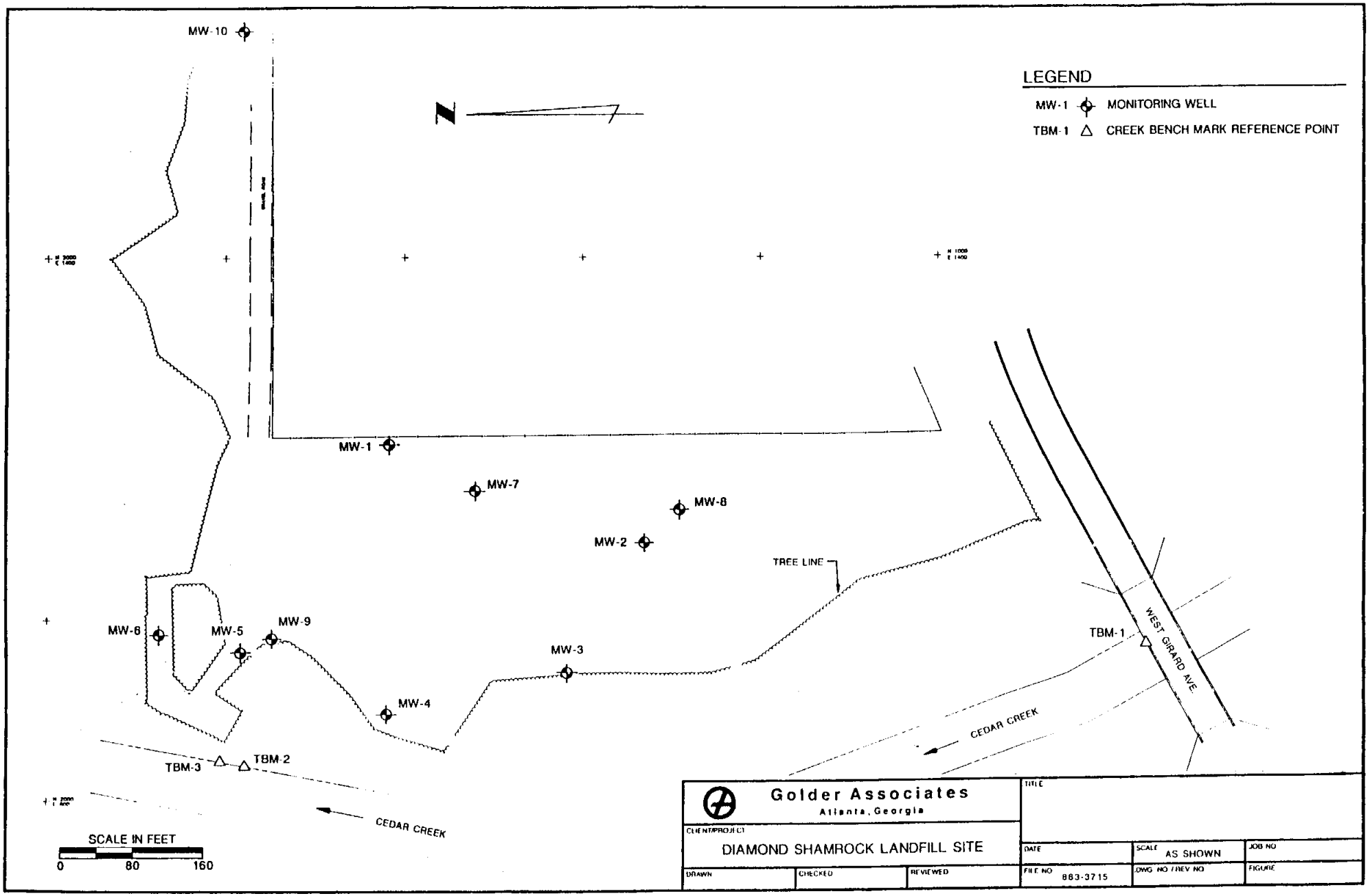


Golder Associates — Atlanta, Georgia

CLIENT/PROJECT: DIAMOND SHAMROCK LANDFILL SITE

TITLE: MONITORING WELL AND SURFACE WATER SAMPLING LOCATIONS

DRAWN	RMS	DATE	4/95	JOB NO.	943-3684
CHECKED		SCALE	AS SHOWN	DWG NO.	66
REVIEWED		FILE NO.	883-3715	REV. NO.	
				SUBTITLE	FIGURE NO. 1



Golder Associates
Atlanta, Georgia

CLIENT/PROJECT
DIAMOND SHAMROCK LANDFILL SITE

TITLE

DRAWN | CHECKED | REVIEWED

DATE | SCALE AS SHOWN | JOB NO

FILE NO 883-3715 | DWG NO / REV NO | FIGURE

337721

Attachment C

Tables

TABLE 1
SUMMARY OF WATER ANALYTICAL RESULTS
DIAMOND SHAMROCK LANDFILL SITE

WELL	DATE	pH	SPECIFIC CONDUCTANCE (umho/cm)	TEMP (C)	1/2-DICHLOROETHANE(uG/L)	TOLUENE(uG/L)	TRICHLOROETHANE(uG/L)	MANGANESE (uG/L)	
								Total	Dissol
PERFORMANCE STANDARD					5.0	1.000	5.0	850	850
MW-1	7/92 (RI/FS)	7.04	800	19.2	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	50	14
	1/93 (RI/FS)	7.55	600	13.8	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	28	<10
	6/93 (RI/FS)	7.10	790	17.5	<5.0	<5.0	9.4	40	31
	1/94 (RI/FS)	7.39	520	16.2	<5.0	<5.0	<5.0	50	NA
	7/95 (RA)	7.12	820	21.7	4 J	<5.0	2 J	403	NA
	2/96 (RA)	7.24	500	15.0	<5.0	<5.0	<5.0	1.5 B	NA
	9/96 (RA)	6.91	500	19.7	<5.0	<5.0	2 J	32	NA
	3/97 (RA)	7.33	490	17.5	NA	NA	NA	<1.1	NA
	9/97 (RA)	6.98	679	17.6	3 J	<5.0	3 JB	302	NA
	3/98 (RA)	7.17	469	16.8	NA	NA	NA	1.7 J	NA
	9/98 (RA)	7.08	640	21.6	<5.0	<5.0	<5.0	389	NA
	3/99 (RA)	6.78	615	14.9	NA	NA	NA	4.4	NA
	9/99 (RA)	7.00	845	19.4	1 J	<5.0	2 J	214	NA
MW-2	7/92 (RI/FS)	7.44	810	18.8	<5.0	<5.0	<5.0	180	110
	1/93 (RI/FS)	7.85	840	14.2	<5.0	<5.0	<5.0	150	98
	6/93 (RI/FS)	7.56	770	17.9	<5.0	<5.0	<5.0	62	38
	1/94 (RI/FS)	7.26	690	15.6	<5.0	<5.0	<5.0	150	NA
	7/95 (RA)	7.47	820	17.0	<5.0	<5.0	<5.0	70.7	NA
MW-3	7/92 (RI/FS)	7.09	860	17.1	<5.0	<5.0	<5.0	290	81
	1/93 (RI/FS)	7.61	420	11.2	<5.0	<5.0	<5.0	65	59
	6/93 (RI/FS)	7.26	760	16.5	<5.0	<5.0	<5.0	130	13
	1/94 (RI/FS)	7.03	360	14.3	<5.0	<5.0	<5.0	370	NA
	7/95 (RA)	7.08	900	19.8	<5.0	<5.0	<5.0	1200	NA
	2/96 (RA)	7.20	440	14	NA	NA	NA	390	NA
	9/96 (RA)	6.76	600	17.5	NA	NA	NA	548	NA
	3/97 (RA)	7.30	470	15.5	NA	NA	NA	788	NA
	9/97 (RA)	7.08	558	17.1	NA	NA	NA	532	NA
	3/98 (RA)	7.16	401	14.8	NA	NA	NA	679	NA
	9/98 (RA)	6.94	482	18.8	NA	NA	NA	567	NA
	3/99 (RA)	6.61	850	13.4	NA	NA	NA	706	NA
	9/99 (RA)	7.08	834	21.0	NA	NA	NA	818	NA
MW-4	7/92 (RI/FS)	7.14	610	17.0	<25	850	<25	930	950
	1/93 (RI/FS)	7.44	560	12.8	<5.0	20	<5.0	960	980
	6/93 (RI/FS)	7.24	660	17.6	<100/<100	2300/2300	<100/<100	1100	1200
	9/93 (RI/FS)	NA	NA	NA	<5.0	<5.0	<5.0	NA	NA
	1/94 (RI/FS)	6.96	440	14.9	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	1200	NA
	7/95 (RA)	7.00	620	16.6	<5.0	<5.0	<5.0	1700	NA
	2/96 (RA)	7.13	520	15.2	<5.0	<5.0	<5.0	8.91	NA
	9/96 (RA)	7.20	500	17.1	<5.0	0.6 J	0.6 J	1230	NA
	3/97 (RA)	7.42	470	16.5	NA	NA	NA	356	NA
	9/97 (RA)	7.18	460	14.9	<5.0	<5.0	0.8 JB	1360	NA
	3/98 (RA)	7.03	513	14.5	NA	NA	NA	249	NA
	9/98 (RA)	7.12	432	18.1	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	1400/1380	NA
	3/99 (RA)	6.94	594	14.9	NA	NA	NA	195/177	NA
	9/99 (RA)	7.18	592	19.3	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	1450/1510	NA
MW-5	7/92 (RI/FS)	7.20	840	18.0	<5.0	<5.0	<5.0	71	88
	1/93 (RI/FS)	7.31	850	14.9	<5.0	<5.0	<5.0	170	130
	6/93 (RI/FS)	7.34	760	17.7	<5.0	<5.0	<5.0	26	30
	1/94 (RI/FS)	7.04	600	15.3	<5.0	<5.0	<5.0	32	NA
	7/95 (RI/FS)	7.01	740	16.5	<5.0	<5.0	<5.0	3.4 B	NA

TABLE 1
SUMMARY OF WATER ANALYTICAL RESULTS
DIAMOND SHAMROCK LANDFILL SITE

WELL	DATE	pH	SPECIFIC CONDUCTANCE (umho/cm)	TEMP (C)	1/2-DICHLOROETHANE(uG/L)	TOLUENE(uG/L)	TRICHLOROETHANE(uG/L)	MANGANESE (uG/L)	
								Total	Dissolv
PERFORMANCE STANDARD					5.0	1.000	5.0	850	850
MW-6	7/92 (RI/FS)	7.12	460	17.1	<5.0	<5.0	<5.0	66	27
	1/93 (RI/FS)	6.96	350	13.7	<5.0	<5.0	<5.0	35	<10
	6/93 (RI/FS)	7.18	520	18.0	<5.0	<5.0	<5.0	95	<10
	1/94 (RI/FS)	7.04	330	13.7	<5.0	<5.0	<5.0	63	NA
	7/95 (RI/FS)	6.83	550	17.2	<5.0	<5.0	<5.0	29	NA
MW-7	7/92 (RI/FS)	7.37	750	19.6	<5.0	<5.0	<5.0	18	20
	1/93 (RI/FS)	7.76	700	12.7	<5.0	<5.0	9.2	17	<10
	6/93 (RI/FS)	7.37	760	18.3	<5.0	<5.0	<5.0	28	<10
	1/94 (RI/FS)	7.78	480	16.5	<5.0	<5.0	<5.0	<10	NA
	7/95 (RA)	7.20	680	19.1	<5.0	<5.0	<5.0	25.7	NA
	2/96 (RA)	7.86	640	17.1	<5.0	<5.0	<5.0	42.5	NA
	9/96 (RA)	7.10	500	21.5	<5.0	<5.0	2 J	<1.0	NA
	3/97 (RA)	7.30	520	16.5	NA	NA	NA	2.4 B	NA
	9/97 (RA)	7.56	563	16.3	<5.0	<5.0	3 JB	33.4	NA
	3/98 (RA)	7.54	546	13.8	NA	NA	NA	4.6 J	NA
	9/98 (RA)	7.26	443	18.3	<5.0	<5.0	1 JB	3.4 B	NA
	3/99 (RA)	7.01	580	14.6	NA	NA	NA	7.1	NA
	9/99 (RA)	7.42	643	20.4	<5.0	<5.0	2 J	22.5	NA
MW-8	7/92 (RI/FS)	6.97	730	18.3	<5.0	<5.0	<5.0	<10	2500
	1/93 (RI/FS)	7.29	660	12.2	<5.0	<5.0	<5.0	1900	1800
	6/93 (RI/FS)	6.98	700	17.5	<5.0	<5.0	<5.0	2200	2200
	1/94 (RI/FS)	7.40	550	14.6	<5.0	<5.0	<5.0	3300	NA
	7/95 (RA)	6.89	760	18.9	<5.0	<5.0	<5.0	2660	NA
	2/96 (RA)	6.94	570	14.1	<5.0	<5.0	<5.0	1920	NA
	9/96 (RA)	6.92	500	18.6	NA	NA	NA	2340	NA
	3/97 (RA)	7.06	430	16.0	NA	NA	NA	1640	NA
	9/97 (RA)	6.73	527	16.3	NA	NA	NA	2320/2350	NA
	3/98 (RA)	6.86	428	15.7	NA	NA	NA	1320/1440	NA
	9/98 (RA)	6.80	483	18.1	NA	NA	NA	2160	NA
	3/99 (RA)	6.54	624	14.0	NA	NA	NA	1340	NA
	9/99 (RA)	6.86	731	21.0	NA	NA	NA	1930	NA
MW-9	7/92 (RI/FS)	7.05	600	18.7	6.0 B	<5.0	<5.0	1970	1620
	1/93 (RI/FS)	7.07	550	14.4	<5.0	<5.0	<5.0	2000	2000
	6/93 (RI/FS)	7.16	660	17.7	6.5	<5.0	<5.0	2500	2400
	1/94 (RI/FS)	7	400	15.1	<5.0	<5.0	<5.0	1900	NA
	7/95 (RA)	7.23	580	17.3	4 J	<5.0	<5.0	990	NA
	2/96 (RA)	7.55	560	16.0	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	314/324	NA
	9/96 (RA)	8.12	500	16.9	<5.0/<10	<5.0/<10	<5.0/<10	136/174	NA
	3/97 (RA)	8.89	480	16.5	NA	NA	NA	7.7 B/42.9	NA
	9/97 (RA)	7.49	473	13.7	<5.0	<5.0	<5.0	192	NA
	3/98 (RA)	7.30	552	14.8	NA	NA	NA	152	NA
	9/98 (RA)	7.34	430	17.7	<5.0	<5.0	<5.0	3.3 B	NA
	3/99 (RA)	7.09	598	15.2	NA	NA	NA	7.0	NA
	9/99 (RA)	7.42	568	17.0	<5.0	<5.0	<5.0	16.4	NA
MW-10	7/92 (RI/FS)	6.97	1000	18.5	16	<5.0	<5.0	160	91
	9/92 (RI/FS)	NA	NA	NA	59	<5.0	<5.0	NA	NA
	1/93 (RI/FS)	7.38	470	12.0	<5.0	<5.0	<5.0	130	29
	6/93 (RI/FS)	7.05	870	18.2	6.1	<5.0	<5.0	1800	<10
	1/94 (RI/FS)	7.30	520	15.6	<5.0	<5.0	<5.0	94	NA
	7/95 (RA)	6.86	820	20.8	<5.0	<5.0	<5.0	15.1	NA
	2/96 (RA)	7.02	440	14.5	<5.0	<5.0	<5.0	10 B	NA
	9/96 (RA)	7.21	600	23.5	<5.0	<5.0	<5.0	38	NA
	3/97 (RA)	7.35	590	25	NA	NA	NA	39.2	NA
	9/97 (RA)	7.03	678	15.3	<5.0	<5.0	<5.0	16.8	NA
	3/98 (RA)	7.05	396	16.3	NA	NA	NA	2.4 J	NA
	9/98 (RA)	6.79	698	21	<5.0	3 J	3 JB	39.9	NA
	3/99 (RA)	6.57	548	14.1	NA	NA	NA	20.8	NA
	9/99 (RA)	6.86	820	18.7	<5.0	<5.0	<5.0	8.8	NA

TABLE 1
SUMMARY OF WATER ANALYTICAL RESULTS
DIAMOND SHAMROCK LANDFILL SITE

WELL	DATE	pH	SPECIFIC CONDUCTANCE (umho/cm)	TEMP (C)	1/2-DICHLOROETHANE(uG/L)	TOLUENE(uG/L)	TRICHLOROETHANE(uG/L)	MANGANESE (uG/L)	
								Total	Dissolved
PERFORMANCE STANDARD					5.0	1.000	5.0	850	850
UPSTREAM #1	6/92 (RI/FS)	7.82	240	18.5	<5.0	<5.0	<5.0	57	25
	1/93 (RI/FS)	7.08	130	9.4	<5.0	<5.0	<5.0	33	23
	6/93 (RI/FS)	7.49	240	22.2	<5.0	<5.0	<5.0	60	39
	1/94 (RI/FS)	6.66	140	9.7	<5.0	<5.0	<5.0	57	NA
UPSTREAM #2	6/92 (RI/FS)	7.89	240	19.0	<5.0	<5.0	<5.0	60	26
	1/93 (RI/FS)	7.00	130	8.6	<5.0	<5.0	<5.0	32	23
	6/93 (RI/FS)	7.35	240	22.8	<5.0	<5.0	<5.0	62	41
	1/94 (RI/FS)	6.53	140	9.3	<5.0	<5.0	<5.0	57	NA
UPSTREAM #3	6/92 (RI/FS)	7.87	260	19.5	<5.0	<5.0	<5.0	61	28
	1/93 (RI/FS)	7.06	150	9.3	<5.0	<5.0	<5.0	34	23
	6/93 (RI/FS)	7.44	450	23.2	<5.0	<5.0	<5.0	70	39
	1/94 (RI/FS)	6.53	240	9.7	<5.0	<5.0	<5.0	55	NA
	7/95 (RA)	7.30	400	27.3	<5.0	<5.0	<5.0	58.5	NA
	2/96 (RA)	7.55	360	13.8	<5.0	<5.0	<5.0	37.8	NA
DWNSTREAM #1	6/92 (RI/FS)	7.89	260	19.5	<5.0	<5.0	<5.0	79	31
	1/93 (RI/FS)	7.10	140	9.5	<5.0	<5.0	<5.0	32	24
	6/93 (RI/FS)	7.46	260	23.2	<5.0	<5.0	<5.0	65	44
	1/94 (RI/FS)	6.52	160	9.0	<5.0	<5.0	<5.0	61	NA
DWNSTREAM #2	6/92 (RI/FS)	7.94	240	20.4	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	73	32
	1/93 (RI/FS)	7.29	140	9.7	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	35	23
	6/93 (RI/FS)	7.68	240	23.3	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	60	44
	1/94 (RI/FS)	6.49	170	9.2	<5.0/<5.0	<5.0/<5.0	<5.0/<5.0	61	NA
DWNSTREAM #3	6/92 (RI/FS)	7.93	250	19.8	<5.0/<5.0	<5.0/<5.0	1 J/<5.0	82	37
	1/93 (RI/FS)	7.21	140	9.8	<5.0	<5.0	<5.0	33	22
	6/93 (RI/FS)	7.47	240	23.4	<5.0	<5.0	<5.0	64	39
	1/94 (RI/FS)	6.54	170	8.7	<5.0	<5.0	<5.0	61	NA
	6/95 (RA)	6.92	280	25.6	<5.0	<5.0	1 J/<5.0	63	NA
	2/96 (RA)	7.62	160	13.5	<5.0	<5.0	<5.0	34.1	NA

Performance standard for manganese changed from 200 ug/L to 850 ug/L in September 1997.
Only those parameters with Performance Standards are shown.
Duplicate analyses for a sampling point are presented separated by a slash (/).
<= Indicates parameter was not detected. The number is the laboratory detection limit.
J= Estimated concentration below the detection limit; presumptive evidence for the presence of the parameter at the reported concentration.
B= Compound was reported in a blank associated with the sample.
NA= Sample was not analyzed for this parameter.
RI/FS= Sample collected and analyzed during Remedial Investigation/Feasibility Study
RA= Sample collected and analyzed during the Remedial Action.

Attachment D

Images Documenting Site Conditions

Diamond Shamrock Superfund Site, May 1, 2000
Cedartown, Polk County, Georgia

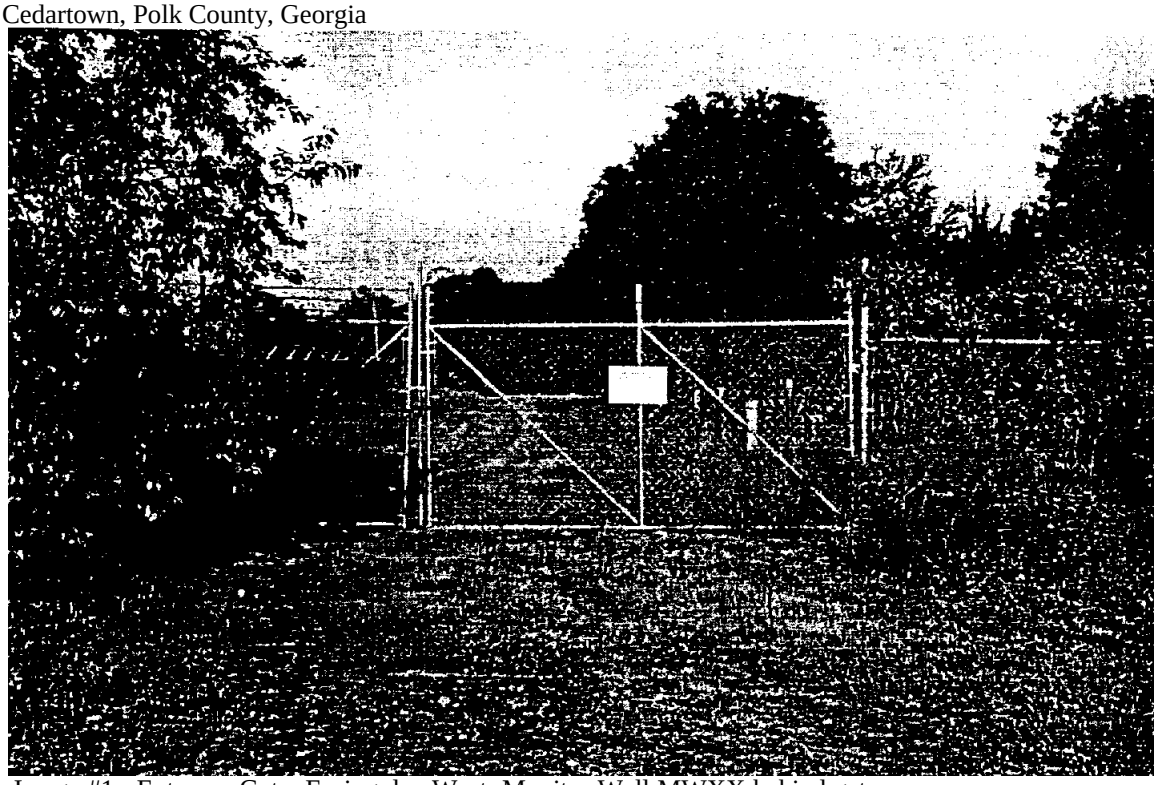


Image #1: Entrance Gate; Facing due West; Monitor Well MWXX behind gate

Image #2: Second Entrance Gate; Facing due West

Image #3: Facing West Southwest; Casing of Monitor Well MWXX;

Image #4: Facing due South; Casing of Monitor Well MWXX

Image #5: Extent of property; facing Southeast

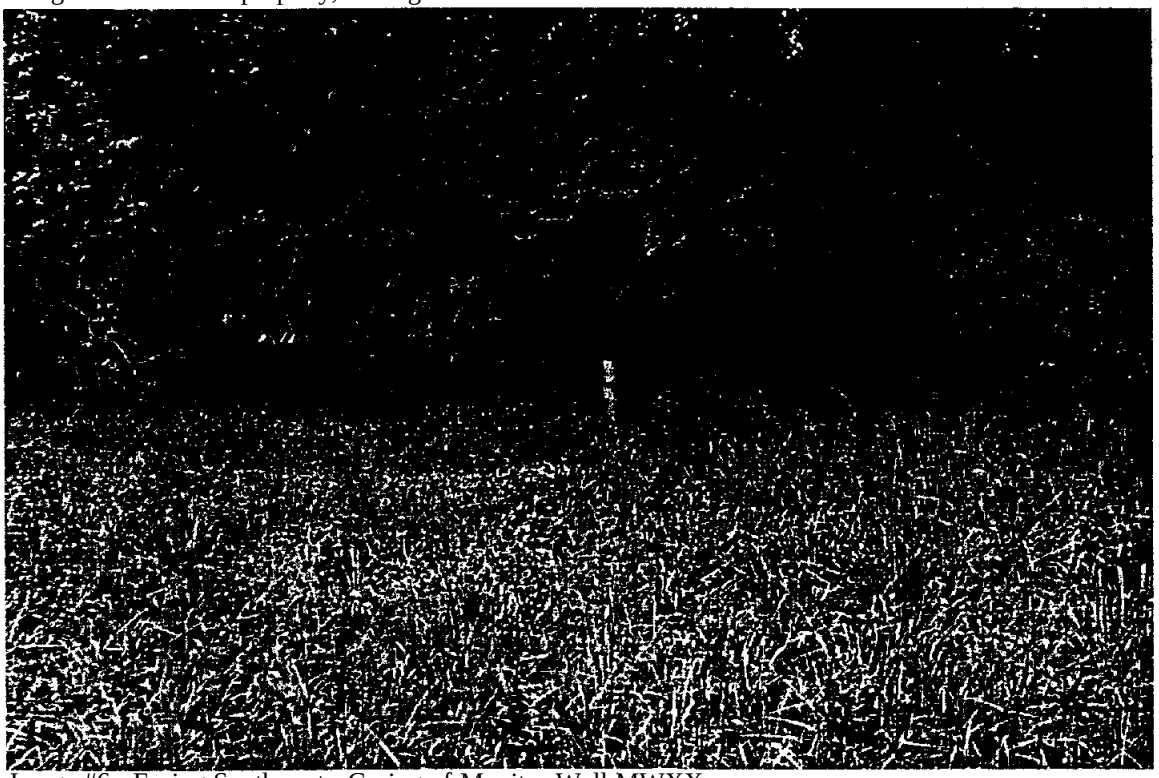


Image #6: Facing Southwest; Casing of Monitor Well MWXX

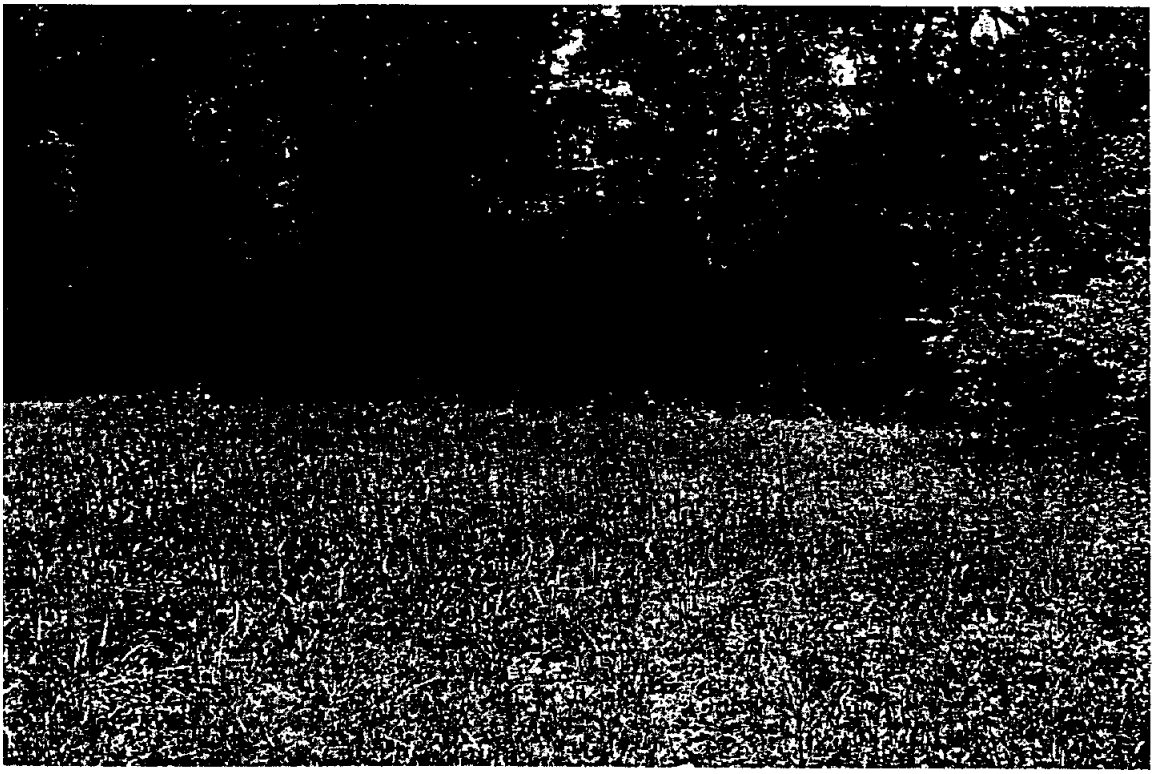


Image #7: Facing Southwest; Casing of Monitor Well MWXX;

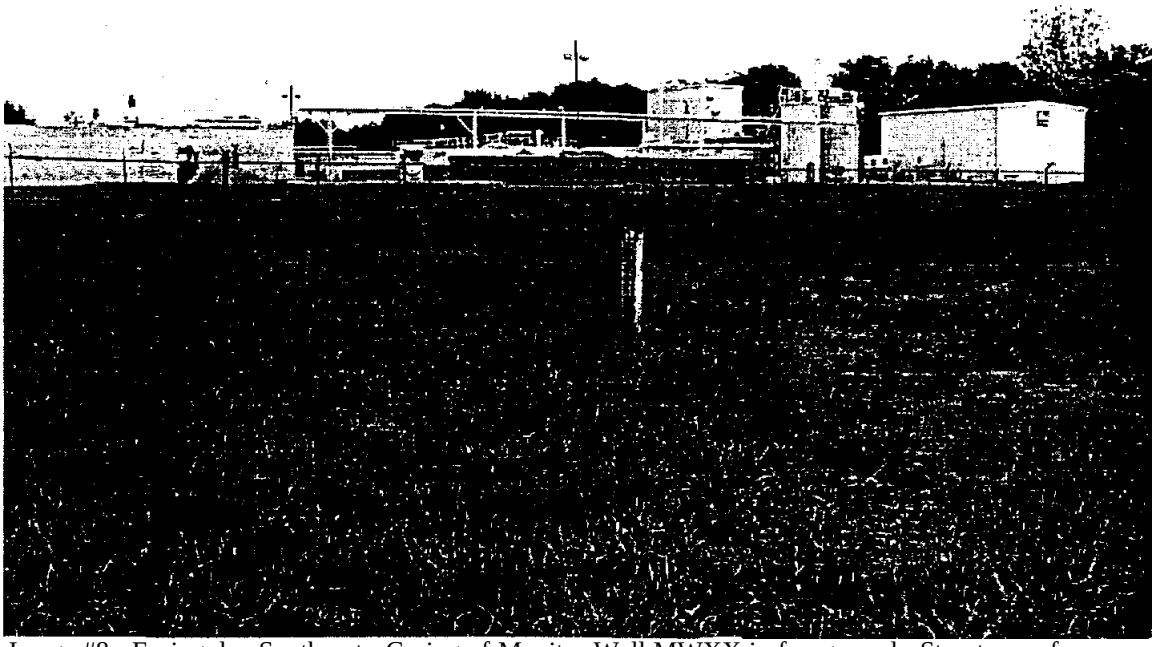


Image #8: Facing due Southeast; Casing of Monitor Well MWXX in foreground: Structures of Geospeciality Chemicals Corp Wastewater Treatment plant located in the background

Image #9: Facing North Northeast; Monitor Well MWXX in foreground

Image #10: Facing South; Eastern property boundary.

Image #11: Facing North Northwest; Extent of property; Image taken from scaffold of Geospeciality Chemicals Corp Wastewater Treatment plant.

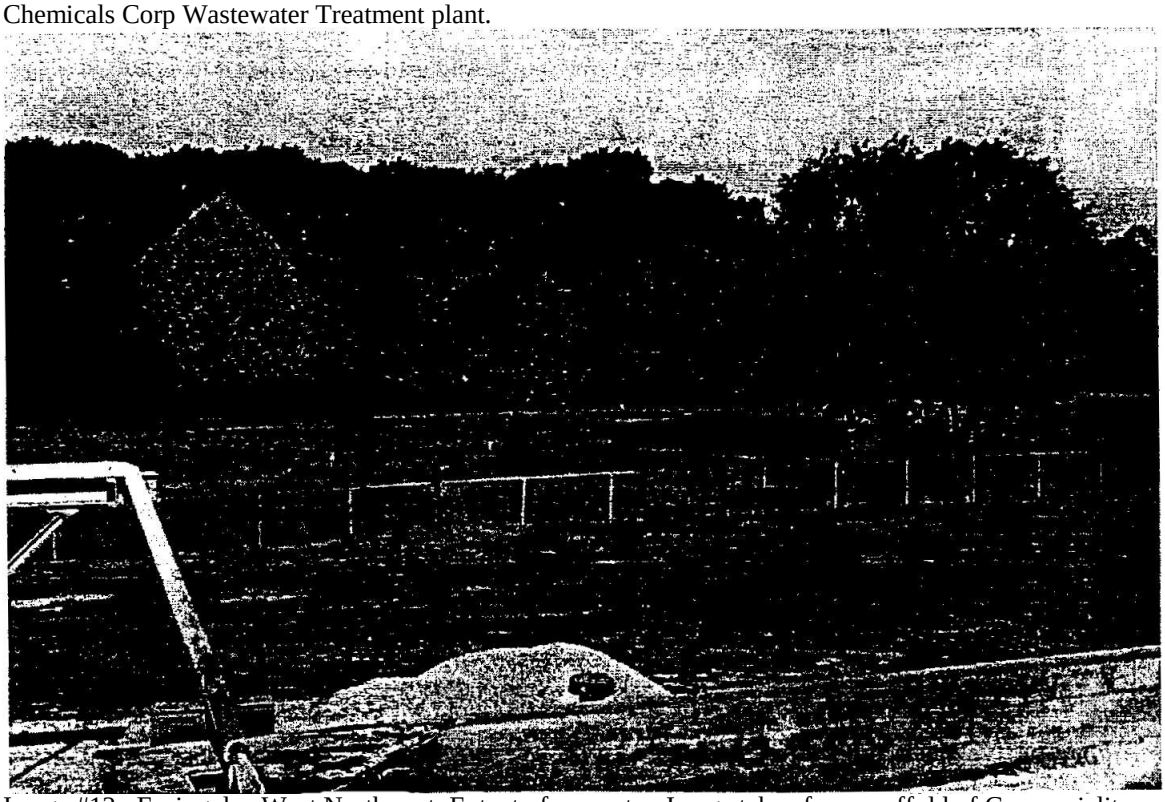


Image #12: Facing due West Northwest; Extent of property; Image taken from scaffold of Geospeciality Chemicals Corp Wastewater Treatment plant.